

SPECIFICATION

OPTICAL FIBER CABLE HOLDER

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to optical fiber cable holders, and more particularly to an optical fiber cable holder that restricts the degree to which optical fiber cables can be bent.

2. Description of the Related Art

[0002] In optical transmission networks, communication is performed by light transmitting devices connected to one another by optical fiber cables. Cable holders retain the cables in position between the light transmitting devices. Each cable generally comprises a core bundle of optical fibers made of frangible quartz glass, and an outer cladding protecting the core. When the position of a light transmitting device in a network is changed, the cables can readily bend. However, excessive bending can result in leakage of light from the optical fibers, and even breakage of the optical fibers.

[0003] Conventional cable holders are most often used for electrical cables. U.S. Patent 5,149,027 discloses a snap fit cable holder having a U-shaped configuration. Two legs each have snap fit projections on both insides and outsides thereof, the projections being at different heights relative to a support base. Cables are positioned in a space between the holder and the support base. The holder can accommodate varying amounts and varying sizes of cables. However, the holder does not prevent excessive bending of cables.

[0004] U.S. Patent 5,530,785 discloses an optical fiber cable fixing structure.

The fixing structure comprises an arcuate inner peripheral surface for contacting a first cable holding member secured to a fixed member, and an arcuate inner peripheral surface for contacting a side surface of an optical fiber cable. A second cable holding member is mounted on the fixed member, for sliding toward and away from the first cable holding member. The second cable holding member has an arcuate second inner peripheral surface for contacting a side surface of the cable, and stopper means adapted to removably fix the second cable holding member in any desired position. However, the fixing structure does not prevent excessive bending of cables.

[0005] In view of the above, there is a need for an improved holder which can effectively prevent excessive bending of optical fiber cables.

SUMMARY OF THE INVENTION

[0006] Therefore, an object of the present invention is to provide an optical fiber cable holder which prevents excessive bending of cables.

[0007] To achieve the above-mentioned object, an optical fiber cable holder in accordance with the present invention comprises a clasp portion and a fixing portion. The clasp portion includes a top cover, and two side walls depending from opposite sides of the top cover. A pair of bent arms respectively extends from other opposite sides of the top cover, to prevent excessive bending of any cable secured in the holder. A pair of spring arms slants inwardly from the side walls, to retain the cables in the clasp portion. The fixing portion includes a pair of locking legs and four stop latches. The locking legs are engagingly received through a pair of holes defined in a base plate. The stop latches are supported on the base plate. The holder is thereby fixed on the base plate.

[0008] Other objects, advantages and novel features of the invention will

become more apparent from the following detailed description when taken in conjunction with the accompany drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is an exploded perspective view of an optical fiber cable holder in accordance with the present invention, together with a base plate; and

[0010] FIG. 2 is an assembled view of FIG. 1, and showing optical fiber cables held in the optical fiber cable holder.

DETAILED DESCRIPTION OF THE INVENTION

[0011] Referring to FIG. 1, an optical fiber cable holder 1 in accordance with a preferred embodiment of the present invention is integrally made from a single piece of metal or a single piece of injection molded plastic material. The holder 1 is fixed on a base plate 2.

[0012] The holder 1 includes a U-shaped clasp portion 11 for holding fibers 3 (see FIG. 2), and a fixing portion 12. The clasp portion 11 comprises a top cover 111, a pair of side walls 112 respectively depending from opposite sides of the top cover 111, and a pair of elastically deformable spring arms 113 respectively slanting inwardly from the side walls 112. A pair of bent arms 114 (only one labeled in FIG. 1) respectively extends outwardly and upwardly from opposite sides of the top cover 111, said opposite sides transversely connecting the side walls 112. The bent arms 114 restrict the degree to which the fibers 3 can be bent. The fixing portion 12 includes a pair of locking legs 121 extending perpendicularly outwardly from the side walls 112 respectively, and a pair of stop latches 122 extending perpendicularly outwardly from respective opposite edges of each side wall 112.

[0013] The base plate 2 is square, and has two rectangular holes 21, with a crossbar therebetween, defined in a middle portion thereof. Each hole 21 is respectively bounded by an internal edge 211 of the base plate 2, the internal edge 211 corresponding to one of the side walls 112 of the holder 1. A distance spanned by the two holes 21 between the respective internal edges 211 corresponds to and is substantially equal to a distance between the two side walls 112. A size of each hole 21 is greater than a size of each locking leg 121 of the holder 1.

[0014] Referring also to FIG. 2, in use, the fibers 3 are inserted into the clasp portion 11 of the holder 1. The side walls 112 of the holder 1 are squeezed toward each other, and the locking legs 121 of the holder 1 are passed through the holes 21 of the base plate 2. The side walls 112 are released, and resiliently return part of the way back to their original orientations to abut against the internal edges 211 of the holes 21. The stop latches 122 are supported on the base plate 2, and the holder 1 is thereby firmly secured to the base plate 2.

[0015] In removing the holder 1 from the base plate 2, the side walls 112 of the holder 1 are squeezed toward each other. The locking legs 121 of the holder 1 are then withdrawn from the holes 21 of the base plate 2.

[0016] The holder 1 holds the fibers 3 in the clasp portion 11. The spring arms 113 slant inwardly to retain the fibers 3 in the clasp portion 11. Because the spring arms 113 are elastically deformable, the holder 1 can hold varying amounts and varying sizes of fibers 3. The bent arms 114 restrict the degree to which the fibers 3 can be bent.

[0017] It should be understood that various changes and modifications to the presently preferred embodiment described herein will be apparent to those skilled in the art. Such changes and modifications may be made without departing from the spirit and scope of the present invention and without diminishing the present

invention's advantages. Thus, it is intended that such changes and modifications be covered by the appended claims.